

James Madison to Thomas Jefferson, December 10, 1783. Partly in Cipher. Transcription: The Writings of James Madison, ed. Gaillard Hunt. New York: G.P. Putnam's Sons, 1900-1910.

TO THOMAS JEFFERSON. MAD. MSS.

Orange Decemr 10th. 1783.

Dear Sir, —My journey from Annapolis was so retarded by rains and their effect on the water courses that I did not complete it till the ninth day after I left you. I took¹ *Col. Mason* in my way & *had an evening's conversation with him. I found him much less opposed to the general impost than I expected. Indeed he disclaimed all opposition to the measure itself but had taken up a vague apprehension that if adopted at this crisis it might embarrass the defence of our trade agst British machinations, he seemed upon the whole to acquiesce in the territorial cession,*

¹ Cypher represented by italics.

dwelt much on the expediency of the guaranty. On the article of a convention for revising our form of Government he was sound and ripe and I think would not decline a participation in the work. His heterodoxy lay chiefly in being too little impressed with either the necessity or the proper means of preserving the confederacy.

The situation of the commerce of this country as far as I can learn is even more deplorable than I had conceived. It cannot pay less to Philada. & Baltimore if one may judge from a comparison of prices here & in Europe, than 30 or 40 Per Ct. on all the exports & imports, a tribute which if paid into the treasury of the State would yield a surplus above all its

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wants. If the Assembly should take any steps towards its emancipation you will no doubt be apprized of them as well as their other proceedings from Richmond.

I am not yet settled in the course of law reading with which I have tasked myself and find it will be impossible to guard it against frequent interruptions. I deputed one of my brothers to Monticello with the draught on your library, but Capt. Key was down at Richmond. As soon as he returns I propose to send again. My Trunk with Buffon &c. has come safe to Fredg. so that I shall be well furnished with materials for collateral reading. In conversing on this author's Theory of central heat I recollect that we touched upon as the best means for trying its validity,¹ the comparative distances from the earths

¹ See letter of Feby. 17, [1784], shewing Buffon who had been read to have been misconceived. Note in MSS.

center of

the summits of the highest mountains and their bases or the level of the sea. Does not the oblate figure of the earth present a much more extensive and perhaps adequate field for experiments? According to the calculations of Martin grounded on the data of Manpertius &c.

The Equatorial diameter of the Earth is 7942.2 Eng. Miles

The polar diam: 7852.4 E.M.

difference between eq: & pol. diameter 89.8. E.M.

The difference then of the semidiameters is 44.9, E. miles, that is $\frac{1}{87.94}$ of the mean semidiameter calling this difference in round numbers 45 miles, and disregarding the small variations produced by the elliptical form of the Earth, the radii will be shortened $\frac{1}{2}$ of a mile by each degree from the equator to the poles. It would seem therefore that the difference of distance from the center at the Equator & at the highest latitude that may [be]

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visited must be sufficient to produce a discoverable difference in the degrees of any heat emitted equally in every direction from the center: and the experiment might be sufficiently diversified to guard against illusion from any difference which might be supposed in the intermediate density of different parts of the Earth. The distance even between the Equator & the polar circle produces a difference of no less than 33¹/₂ miles i.e. 1/119 of the mean distance from the center; so that if the curiosity of two sets of French Philosophers employed in ascertaining the figure of the earth, had been directed to this question, a very little additional trouble & expence might perhaps have finally solved it. Nay the extent of the U.S. computing from the 31° of lat: to the 45° only makes a difference of 7 miles in the distance from the center of the Earth; a greater difference I suppose than is afforded by the highest mountains or the deepest mines or both put together.

On my delivering you the draught on Mr. Ambler I remember you put into my hands a note which I never looked into supposing it to relate to that circumstance In examining my papers I perceive that I have lost it and mention it to put you on your guard in case the note sh. fall into bad hands & be capable of being abused. Present my respects to Mr. Mercer & the other gentlemen of the Delegation & be assured that I am yrs sincerely

You will be so good as to give the inclosed a safe conveyance to Mrs. House.